POWER SERIES II
180W 869-894MHZ RF POWER AMPLIFIER
USER MANUAL

1. GENERAL DESCRIPTION

The Power Series II 180W, 869-894MHz Power Amplifier is a high power amplifier (PA) that incorporates LDMOS technology to provide high efficiency and rugged operation. It is developed for cellular application. The PA features various alarms and protection circuitry, Automatic Level Control (ALC) and cooling fans.

2. INSTALLATION

Note: Make sure the PA's output port is appropriately terminated before applying any RF input signal.

Connect the RF input signal to the PA's input port labeled RF IN. Connect the PA's output port labeled RF OUT to a RF load or an antenna. Connect a DC power supply source to the terminal block labeled + -. Apply the required 26VDC @ 20A voltage. After going through an initialization state, the PA's DC POWER LED (green) and RF INPUT LED (red) should be on. Apply and then slowly increase the RF input signal (20W max, 869-894MHZ). Monitor the RF output. Continue increasing the RF input level until 180W is reached at the RF output port. RF INPUT LED should turn off. TX ON LED (green) should turn on. The PA is now transmitting. No other adjustment is necessary.

3. SPECIFICATIONS

Electrical

Frequency Range:	869-894 MHz
Output Power:	180 Watts (max)
ALC Settling Time:	100ms max to within ± 1dB of final value
Input Power:	20 Watts (max)
Input Return Loss:	-10.0 dB (max)
Harmonics & Spurious:	-70dBc (max)
EMI:	FCC Specifications
Stability:	Under 3:1 VSWR
DC Supply Voltage:	26-28 V
Input DC Power:	600 Watts (maximum)
RF Load VSWR:	Full power at better than 2:1 VSWR
Fold Back Condition:	Load 2:1-3:1 VSWR: fold back by 3dB (Po=90W)

	Over temperature range: +50 to +60°C fold back by 3dB (Po=90W) DC supply voltage: below +26V full power until ALC=5V
Shutdown condition:	
Input Power:	Input power greater than 20 Watts
Dump Load:	Final pallet fails
Over Temperature:	Ambient temperature greater than +60°C Heat sink temperature greater than +90°C
Load VSWR:	Greater than 3:1 VSWR
DC Supply Voltage:	Less than 22V or greater than 30V
RF Output Power Control:	Output power is adjustable from 20 to 180W through front-panel mounted -10-turn pot
Alarms and Indicators:	
DC PWR ON, Green LED:	ON: between 25-28V Flash: between 22-25V or 28-30V OFF: less than 22V or greater than 30V
TX ON, Green LED:	ON, power amplifier is functional
RF INPUT, Red LED:	ON: No RF input power Flash: RF input is Over/Under specification
High VSWR, Red LED:	ON: greater than 2:1 VSWR
Over Temp, Red LED:	Flash: Ambient temp between +50 to +60°C ON: Ambient temp greater than +60°C ON: Heat sink temp greater than +90°C

Connectors:

RF in/out: N type-Female

DC: Terminal block

9-pin DSUB female

Pin #	Connection
1	Low Output Power/BYPASS (0V-no fault, 5V-fault)
2	Over Temperature (0V-no fault, 5V-fault)
3	Input Power (0V-no fault, 5V-fault)
4	NC (FORM_C Relay)
5	NO (FORM_C Relay)
6	GROUND (Ground)
7	VSWR (0V-no fault, 5V-fault)
8	External Reset
9	COMMON

Environmental

Operating Temp: -30 to 45°C

Mechanical

Cooling Fan: Internal fan, forced air front to rear